Multi Media Biometric Time & Attendance And Access Control Terminal

S900

USB UNIVERSAL SERIAL BUS | TCP/IP | Colour TFT Screen

User Manual

Version 1.1
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Advanced Biometric and RFID Solutions

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Table of contents

1 Getting started 3

1.1 Fingerprint Placement 3
1.2 Instruction for Card Swipe 3
1.3 Precautions 3

2 Introduction of device 4

2.1 Overview of Device Functions 4
2.2 Important Safeguards 4
2.2.1 Installation Location 4
2.2.2 Use of Sensor 4
2.2.3 Product Appearance 4
2.3 Using the Fingerprint Terminal. 4
2.4 Date & Time Adjustment. 5
2.5 Enrol Administrator / User 6
2.6 Password Enrolment 7
2.7 RFID Card Enrolment 7
2.8 Manage Users 8
2.9.1 Search Users 8
2.9.1 Delete User. 9

3 User Access 9

3.1 Description of User Access 9
3.2 Assign a User to Time Zone 10
3.2.1 Create a Time Zone 10
3.2.2 Assign a Holiday Time Zone 11
3.2.3 Create or Edit Group settings 11
3.2.4 Unlocking Combination settings 12
3.2.5 Change Access Control Parameters 12
3.2.6 Duress Alarm Parameters 13
3.2.7 Define a Duress Finger 13
3.2.8 Work Codes 14

4 Communications 16

4.1 Network (TCP/IP) 16
4.2 RS232/485 16
4.3 Security 17

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Table of contents...continue 1

4 Communications...continue 17

4.4 Wiegand 17

4.5 Web setup 18

5 System 19

5.1 System settings 19

5.2 Data Management 19

5.2.1 System Update 20

5.3 Keyboard 20

5.4 Display 20

5.5 System Reset 21

5.6 Bell 21

5.7 Miscellaneous settings 22

5.8 Pendrive (USB) 22

5.9 Auto Test 22

5.10 Record 23

5.11 System Information 23

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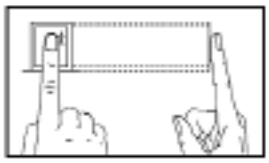
1. Getting started

1.1 Fingerprint Placement

Recommended fingers: The index finger, middle finger or the ring finger; the thumb and little finger are not recommended (because they are usually clumsy on the fingerprint collection screen).

1. Proper finger placement:

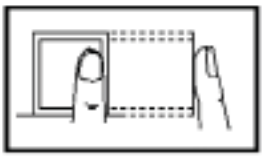


The finger is flat to the surface and centered in fingered guide.

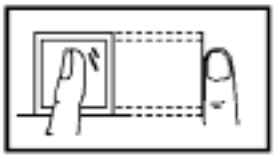
2. Improper finger placement:

Not flat to the surface

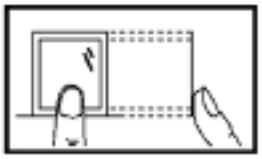
Off-center



Slanting



Off-center



Please enrol and verify your fingerprint by using the proper finger placement mode. We shall not be held accountable for any consequences arising out of the degradation in verification performance due to improper user operations. We shall reserve the right of final interpretation and revision of this document.

1.2 Instruction for Card Swipe

This device is supplied with an integrated non-contact RFID (125 MHz) card reader module. By offering multiple verification modes such as fingerprint, RF card and fingerprint + RF card verification, this device can accommodate diversified user needs.

Swipe your card across the sensor area after the voice prompt and remove your card after the device has sensed it. For the swipe area, please see 2.2.3 Product Appearance.

1.3 Precautions

Protect the device from exposure to direct sunlight or bright light, this greatly affects the fingerprint collection and leads to fingerprint verification failure.

It is recommended to use the device under a temperature of 0–50°C so as to achieve the optimal performance. In the event of exposure of the device to the outdoors for long periods of time, it is recommended to adopt sunshade and heat dissipation facilities because excessively high or low temperature may slow down the device operation and result in high false rejection rate (FRR).

When installing the device, please connect the power cable after connecting other cables. If the device does not operate properly, be sure to shut down the power supply before performing necessary inspections. Note that any live-line working may cause damage to the device and the device damage arising out of live-line working falls beyond the scope of our normal warranty.

For matters that are not covered in this document, please refer to related materials including the installation guide, access control software user manual.

Summary

* Please ensure correct placement of finger on reader.

* Ensure to disconnect all power cables, before attempting maintenance.

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2. Introduction of Device

2.1 Overview of Device Functions

As an integrated fingerprint & access control device, our product can be connected with either an electronic lock or an access controller. This device features simple and flexible operations and supports the use of administrators. The screen displays will guide you through all the operations. It supports access control function for a security management and supports multiple communication modes.

Summary

* Multiple communication modes

2.2 Important Safeguards

2.2.1 Installation Location

Do not install terminal in areas which are exposed to bright sunlight or rain, as the fingerprint readers are not designed to work in those areas. Bright light will interfere with reading of the sensor and fingerprint readers are not waterproof or vandal proof. It is recommended to protect your fingerprint terminal with enclosure.

* Do not install in bright light or direct sunlight.

2.2.2 Use of Sensor

Do not abuse the fingerprint sensor by scratching the surface, contacting the sensor's surface with heat, pressing hard during placement of fingerprint for verification. Clean the sensor occasionally with cellophane tape to maintain the performance of the sensor.

* Recommended height is 1.2m from the floor

2.2.3 Product Appearance

Front view:

2.3 Using the Fingerprint Terminal

This chapter will guide on how to use the fingerprint terminal effectively. To get a good reading every time, initial fingerprint enrollment must be done properly.

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The fingerprint terminal provides 4 types of enrolment methods:

- **Fingerprint enrolment**

  User enrolls his fingerprint template into a terminal and the template will be used for future verifications.

- **Password enrolment**

  For user who has difficulty to enrol fingerprint due to poor fingerprint quality, enrolment of password is recommended. Password enrolment is also suitable for visitors and temporary workers.

- **Fingerprint and password enrolment**

  Under this option, a user can enrol both fingerprint and password at the same time. The user can either use fingerprint or password to report attendance or to gain access.

- **RFID card enrolment**

  Please refer to Chapter 2.7 for RFID Card Function.

2.4 Date / Time Adjustment

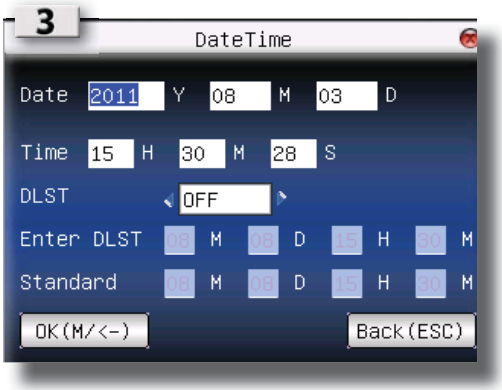
When first installing a fingerprint terminal, it is important to set the correct date and time.

Follow the steps shown to access the Date/Time adjustment menu:

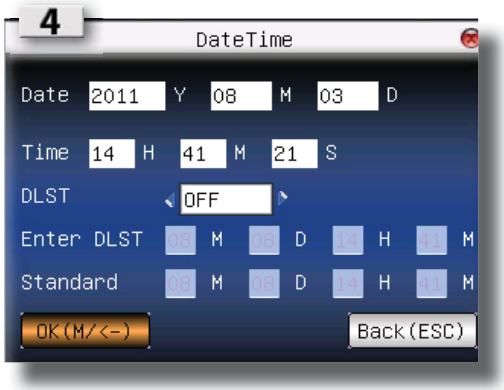
- You can insert inputs into the terminals through the keypad. It contains numbers from 0-9, an OK button, an ESC/Cancel button, a Scroll up/down button, a doorbell button and a Menu button.

- Press M/↵ (menu) once

- Press ▶ 3 times to go to Date/Time
- Press OK once



- Press ▼ to go to the desired field.
- Enter the value using keypads.



- Press OK once to confirm settings.

Summary

* Ensure the correct date & time on the unit.

* Enter the correct date & time in the required fields

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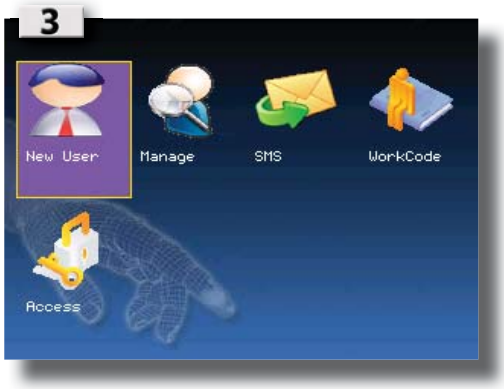
2.5 Enrol Administrator / User

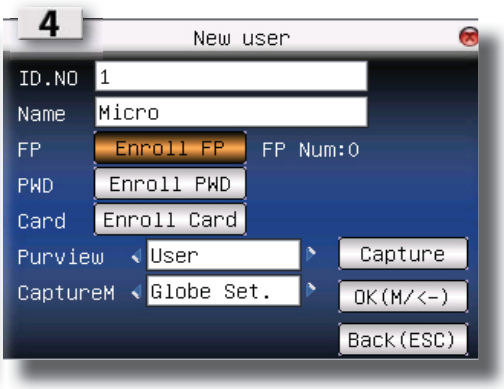
Once the fingerprint terminal is switched on, a display on the screen will appear. Enrol a supervisor or an administrator, who is the in-charge person to administer the fingerprint templates and the transaction data in the terminal. Choose trustworthy people for this particular role.

- Press M/↵ (menu) once

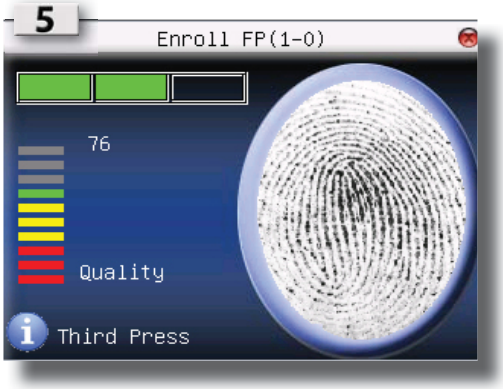
- Press OK (menu) once



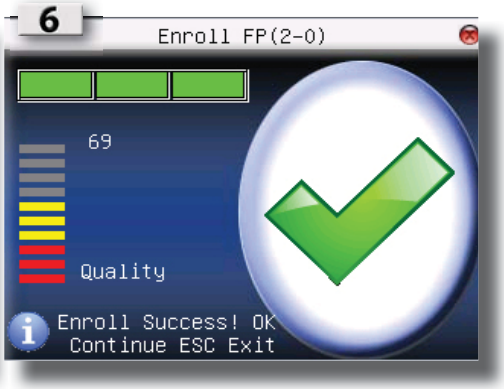
- Press OK (menu) once



- Press ▼ 2 times to enrol fingerprint
- Press OK



- Press desired finger 3x times on sensor to enrol



- Press OK once to enrol more
- Press ESC to exit

Summary

* Ensure to enrol an administrator on the unit.

* FP = Fingerprint

* PWD = Password / pin

* User = No administrative rights on the unit

* Admin = Full control of unit

* Ensure a good quality fingerprint

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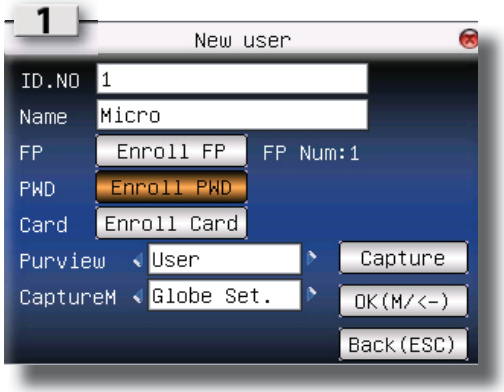
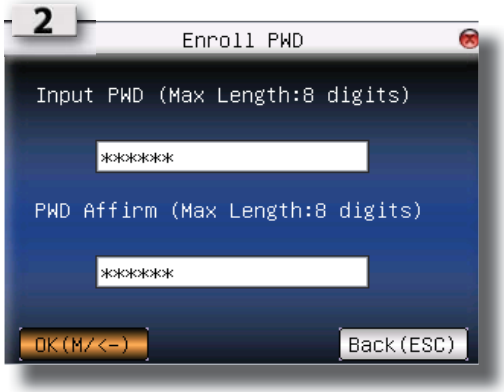
2.6 Password Enrolment

If a user cannot enrol his fingerprint, he can choose to use passwords. Follow the steps below:



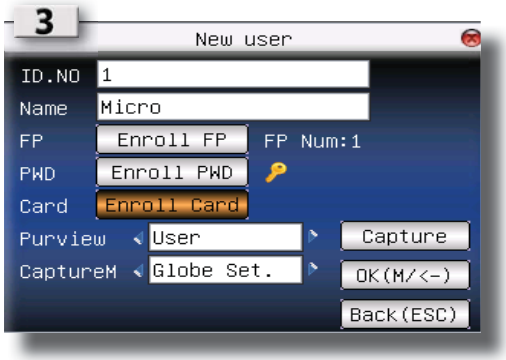
- Press [▼] 3x times to enrol passowrd



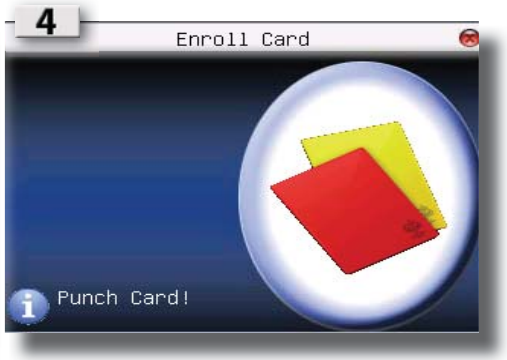
- Type a numeric password in the fileds
- Press [OK] to enter

2.7 RFID Card Enrolment

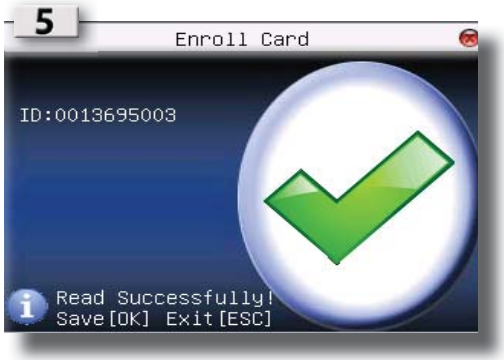
If a user cannot enrol his fingerprint, he can choose to use a RFID Card. Follow the steps below:



- Press [▼] 4x times to enrol a RFID card



- Punch the card to enrol



- Confirmation of enrolment
- Press [OK] to save OR
- Press ESC exit

Summary

* Password may contain numbers ranging from 1 - 8 digits.

* RFID card is for added security on the unit, or if the user can't use a fringerprint

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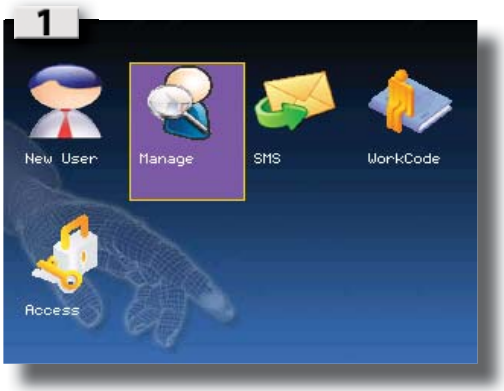
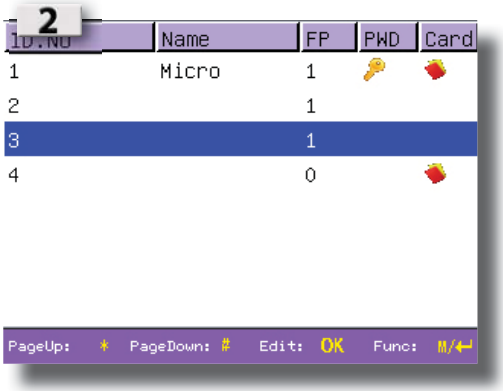
2.8 Manage Users

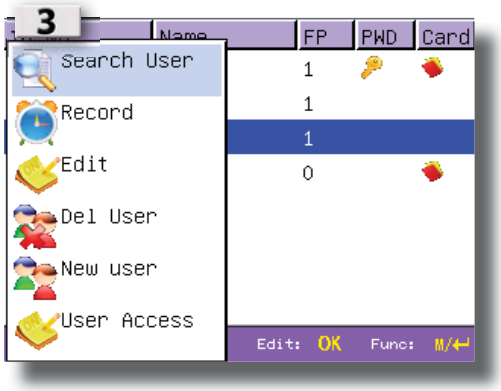
2.8.1 Search User



- Press M/↵ (menu) once
- Press OK
- Press ▶ once
- Press OK



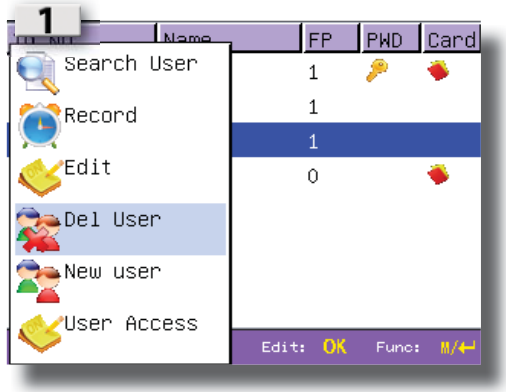
- Press ▼ to selected user



- Press M/↵ (menu) for options window
- Select SEARCH USER
- Press OK

- Type in the desired user id to search

2.8.2 Delete user



- Select DEL USER to enter delete options

- Delete a single user
- Move down to desired user
- Press OK

Summary

* Take note: Only Administrator can edit / delete users

* Ensure to select correct user ID before deletion

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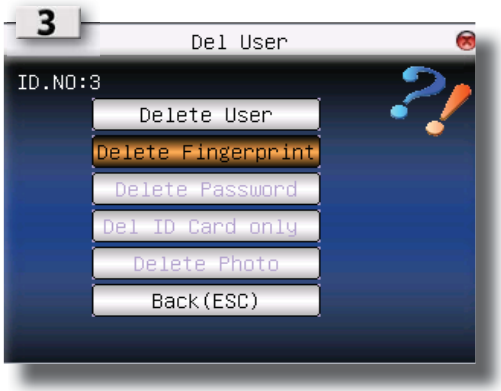
2.8.2 Delete user...continue



- Press ▼ (menu) once to select available options to delete.

- Press OK to confirm

3. User Access

3.1 Description of User Access

Access option function setting is the settings of user's accessibility to certain doors. It is known as Time Zone. A combination of Time Zones is known as Group Time Zone. There are a total of 50 Time Zones available in the reader. Below are some examples of Time Zone configurations and combinations of Time Zones.

* Time Zones can be created for access times to allow access

Time Zone 1

Constant access time for a period of one week . Table below is showing the time zone 1 detailed schedule where users are only allowed access from 9am to 6pm from Monday to Sunday.

Time Zone	1
SUN	09H00 : 18H00
MON	09H00 : 18H00
TUE	09H00 : 18H00
WED	09H00 : 18H00
THU	09H00 : 18H00
FRI	09H00 : 18H00
SAT	09H00 : 18H00

* Access from 9H00 - 18H00
* Everyday of the week

Time Zone 2 & 3

Variation in access for a period of one week . Table below is showing the Time Zone 2 where users are allowed to access from 8am to 12pm from Monday to Friday but denied any access on the weekends and Time Zone 3 where users are allowed to access from 2pm to 6pm from Monday to Friday but denied any access on the weekends. The Time Zone 2 and Time Zone 3 belongs to the same group of employees, therefore they can be grouped together in Group Time Zone, for example Group.

Time Zone	2	3
SUN	23H59 : 00H00	23H59 : 00H00
MON	08H00 : 12H00	14H00 : 18H00
TUE	08H00 : 12H00	14H00 : 18H00
WED	08H00 : 12H00	14H00 : 18H00
THU	08H00 : 12H00	14H00 : 18H00
FRI	08H00 : 12H00	14H00 : 18H00
SAT	23H59 : 00H00	23H59 : 00H00

* TZ 2 : Access from 8H00 to 12H00 during week
* No weekend access
* TZ 3 : Access from 14H00 to 18H00 during week
* No weekend access

Summary
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Group Time Zones

There are a total of 5 Group Time Zones available for use. Every new registered user belongs to Time Zone 1. Default grouping combination is Group 1 and default Group Time Zone 1.

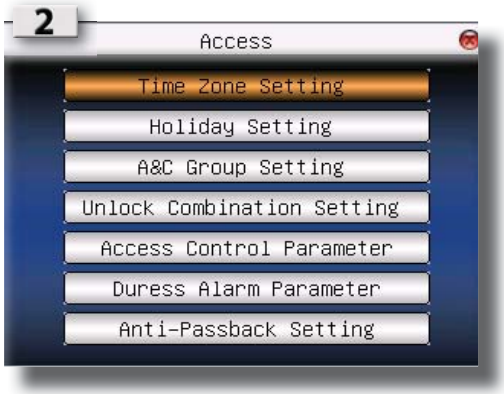
GROUP TIME ZONE	TIME ZONES		
1	2	3	
2			
3			
4			
5			

Under a condition where Group 1 and Time Zone 1 are in factory default status, new registered user defaults in unlocking status. If the grouping of that user does not include in grouping combination setting, then user can only record time attendance but cannot unlock the door.

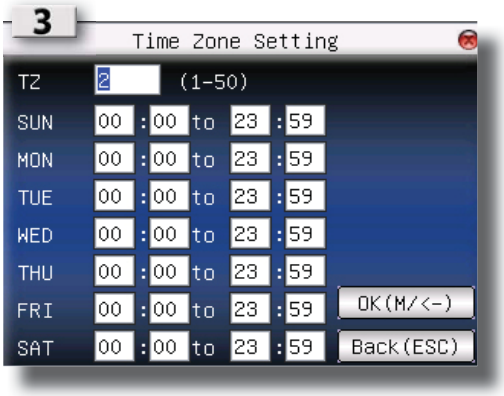
3.2 Assign a user to a Time Zone

3.2.1 Create a Time Zone

- Press M/↵ (menu) once
- Press OK
- Press ▼ to select ACCESSS
- Press OK



- Press OK once


3
Time Zone Setting
TZ 2 (1-50)
SUN 00 :00 to 23 :59
MON 00 :00 to 23 :59
TUE 00 :00 to 23 :59
WED 00 :00 to 23 :59
THU 00 :00 to 23 :59
FRI 00 :00 to 23 :59
SAT 00 :00 to 23 :59
OK(M/<-)
Back(ESC)

- Press ▼ to selected field and enter values

* Ensure to setup a Time Zone first before assigning users

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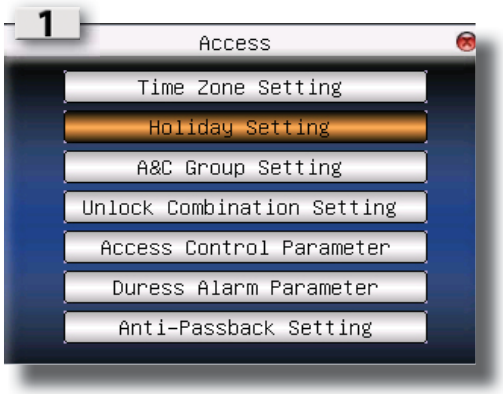
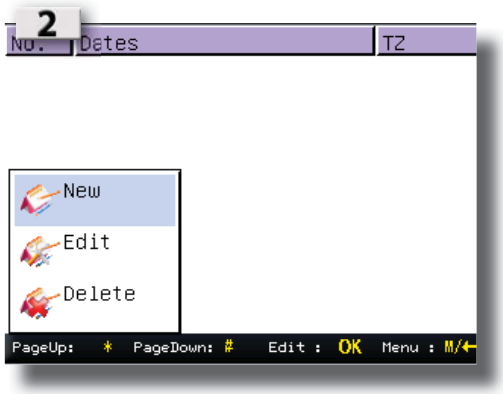
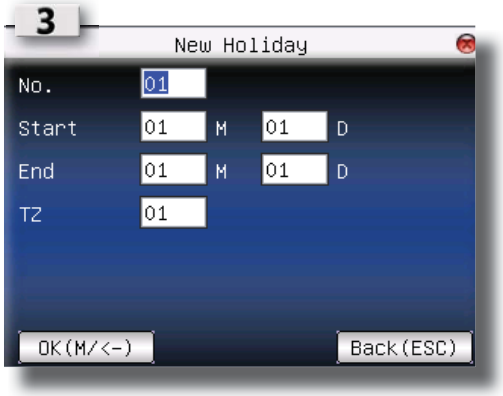
3.2.2 Assign a Holiday Time Zone



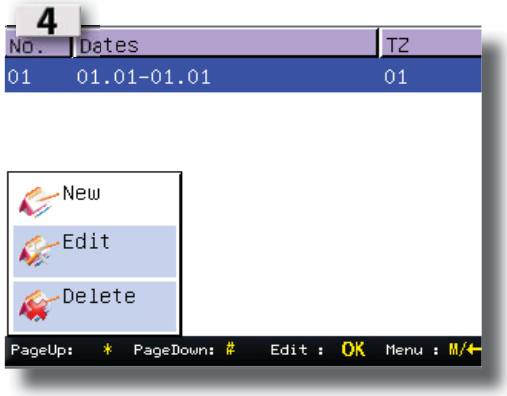
- Press ▼ to select HOLIDAY SETTINGS



- Press M/↵ to open options window
- Press OK to create a new settings

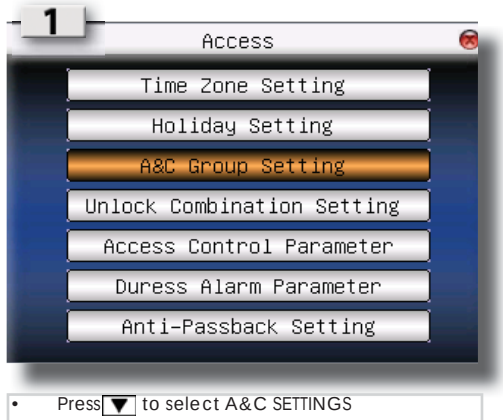


- Insert values
- Press OK to save

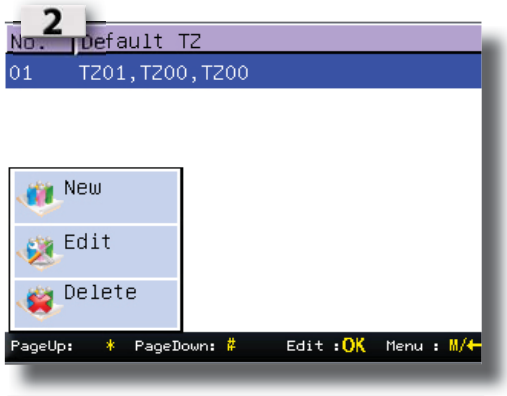


- EDIT / DELETE are available to change and delete

3.2.3 Create or Edit a Access Control Group setting



- Press ▼ to select A&C SETTINGS



- Press M/↵ to open options window
- Note that Time Zone is already available
- NEW / EDIT / DELETE options are available

Summary

* Ensure to capture all holidays when setting up.

* Recommended to create holiday time zones to deny access, rather than deny access per user for holidays

* Delete is only available when a new group is created. There must always be a group active.

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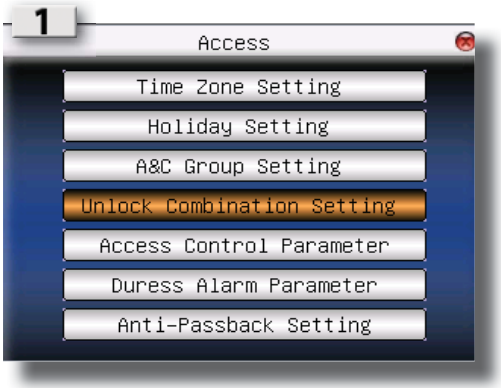
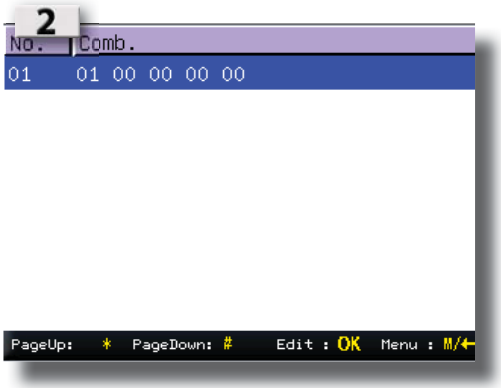
3.2.4 Unlocking Combination settings

Combo settings are for extra added security, where more than ons user need to sign in before access is granted.

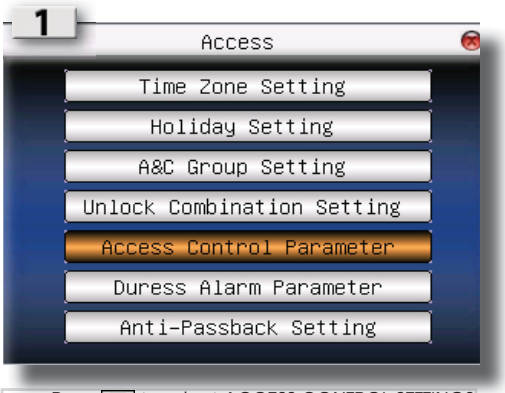


- Press ▼ to select UNLOCK COMB SETTINGS
- Press OK

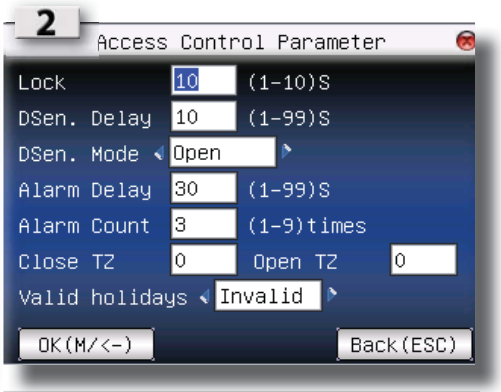


- Press M/↵ (menu) for NEW / EDIT / DELETE options

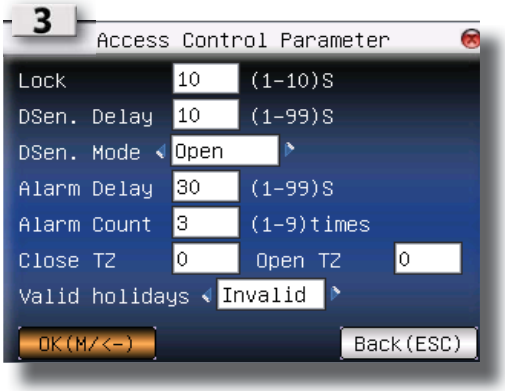
3.2.5 Change Access Control Parameters settings



- Press ▼ to select ACCESS CONTROL SETTINGS
- Press OK



- Press ▼ to select field and change values



- Press OK to save.

- **Lock (1-10s) :**
  To adjust the unlocking time after verification.
- **Dsen. Delay (1-99s) :**
  To delay door sensor from triggering alarm system when door is not closing. This function only works when a door sensor is attached to the reader.
- **Dsen Mode :**
  To choose the type of door sensor attached to the reader. There are NO (normally opened) and NC (normally closed) available. Choose NONE if no door sensor is attached.
- **Alarm Delay (1-99s) :**
  To delay the reader from triggering alarm system.
- **Alarm count (1-9 ti mes) :**
  To adjust the maximum verification failures of users. When the maximum is reached, reader will trigger alarm system.
- **Close TZ :**
  Door is always locked during the predefined time period, so users cannot gain access after verification.
- **Open TZ :**
  Door is always unlocked during the predefined time period, so users do not need to verify their identities but can gain access.
- **Valid holidays :**
  Choose Valid to enable the holiday settings. Choose Invalid to disable the holiday settings.

Summary

* Combo settings for added security

* 2 or more user verification needed before access allowed

* Parameter settings is to change the control of the unit

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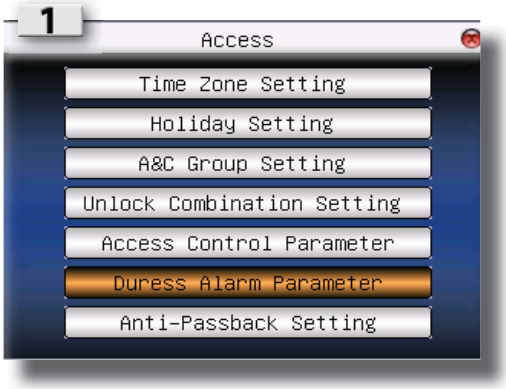
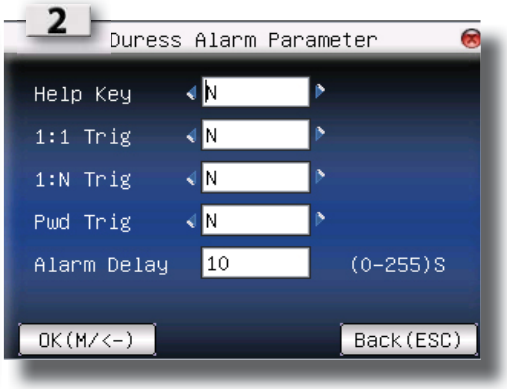
3.2.6 Duress Alarm Parameters

The fingerprint reader will trigger alarm system after a duress fingerprint is verified sucessfully. It is advisable :

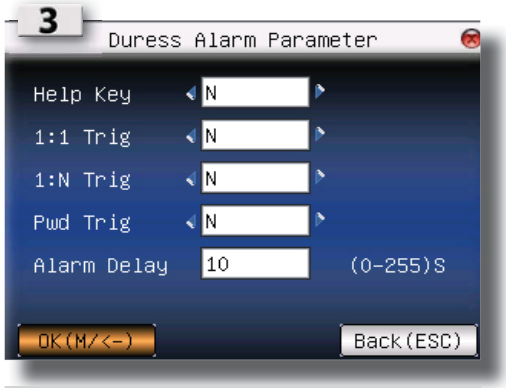
- 1 to use different fingers to do daily clocking mechanism and to trigger duress alarm
- 2 to use different verification to do daily clocking mechanism and to trigger duress alarm.



- Press [▼] to select DURESS ALARM SETTINGS
- Press [OK]



- Press [▼] to select value field
- Press [◀] [▶] to change options



- Press [OK] to save

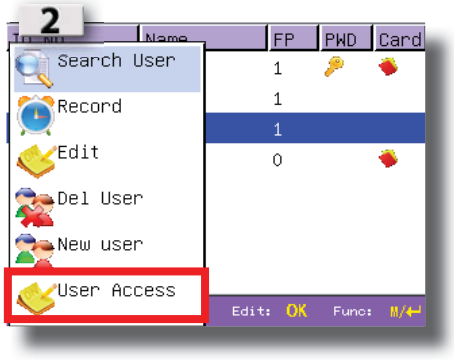
- Help key :
  Select [Yes] to enable. Hold the for 3 second followed by the fingerprint verification. Successful verification will trigger alarm system.
- 1:1 Trig :
  Select [Yes] to enable. Enter user ID followed by fingerprint verification to trigger alarm system. During daily clocking mechanism, all users use 1:N fingerprint verification. All 1: N fingerprint verification process will trigger alarm system.
- 1:N Trig :
  Select [Yes] to enable. Place finger on scanner for fingerprint verification to trigger alarm system. During daily clocking mechanism, all users use 1:1 fingerprint verification. All 1:N fingerprint verification process will trigger alarm system.
- Pwd Trig :
  Select [Yes] to enable. Enter user ID and password for verification to trigger alarm system. During daily clocking mechanism, all users use fingerprint verification. Any password verification process will trigger alarm system.
- Alarm delay :
  To delay the reader to trigger alarm system after verification.

3.2.7 Define a Duress Finger

If users would like to use different fingers for daily clocking and to trigger duress alarm, users must enrol with more than 1 fingerprint (2 or above).

- Example : index finger for daily clocking activities and thumb as duress finger.

When duress finger is used for verification, it will trigger alarm system as well. Administrator does not need to enable any of the verification methods in Duress Alarm Parameters.



* Enrol 2x or more fingerprints to assign a fingerprint.

* Assign index finger for daily clocking, and thumb for duress finger.

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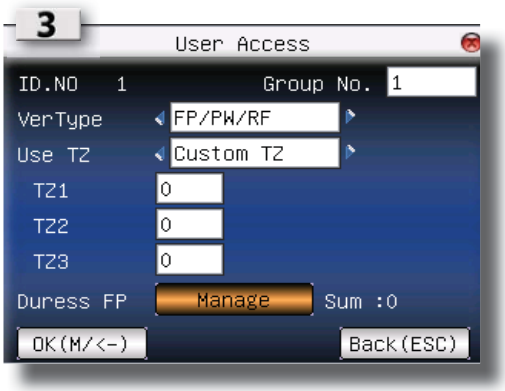

- Press OK on USR MNG, ▶ to MANAGE
- Select user id for change
- Press M/↵, USER ACCESS
- Select MANAGE

- Press M/↵(menu) once
- Select ENROL FP
- Follow instructions
- ESC to exit

- Press ESC
- Press OK to c

- Press OK to exit

3.2.8 Work Codes

This terminal is providing work code feature. The work code feature allows user to key in predefined number after fingerprint or password verification. User will key in related work codes to show purpose of their clocking data. Table below is showing examples of work code function predefined by number:

REASON	WORK CODE
Engineer	100
Welder	200
Packer	300
Receiving	400
Dispatch	500

* Workcodes can be customised.

* Advisable to use software to adjust workcodes

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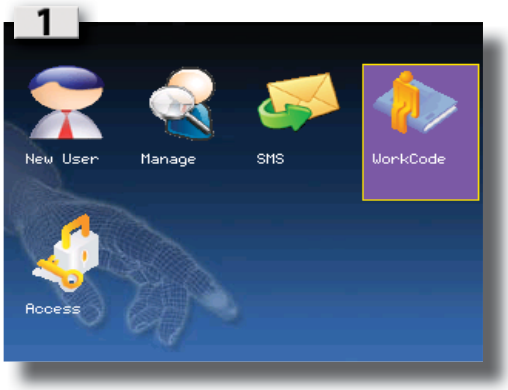
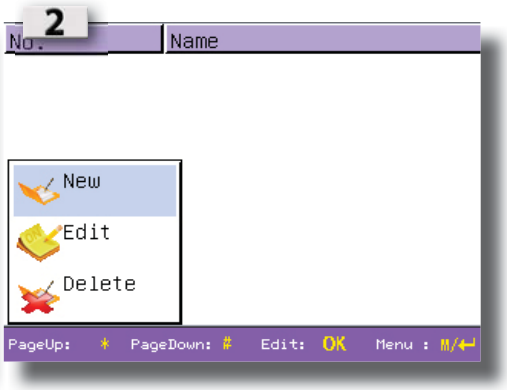
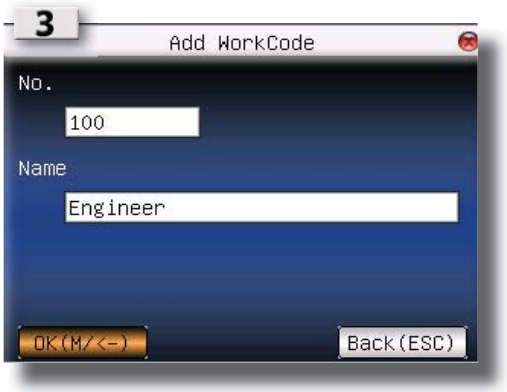
Create and assign work codes



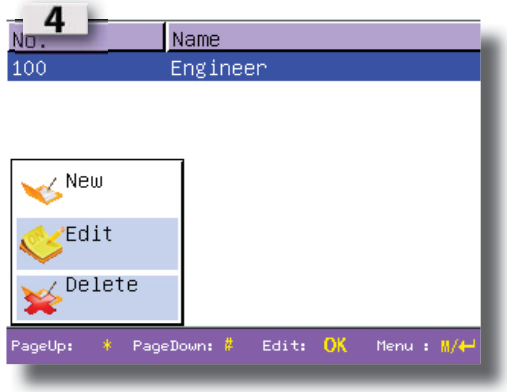
- Press [OK] on USR MNG
- Press [▶] 3x times
- Press [OK] on WORKCODE



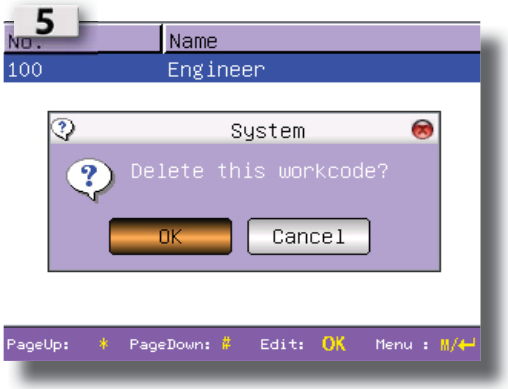
- Press [M/↵] for options window
- Select NEW to create workcode



- Complete the fields



- EDIT / DELETE available for changes



- If you wish to delete confirm with [OK]

NOTE :

It is recommended to define work codes from the software rather than from the hardware because the process is easier.

Summary

*Create / Edit workcodes

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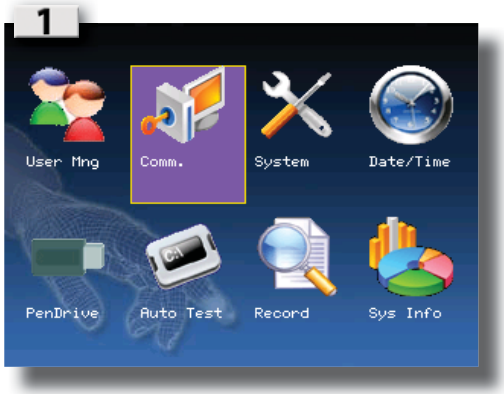
4. Communications

4.1 Network (TCP/IP)



- Press M/↵ once
- Press ▶ once
- Press OK

- Press OK on NETWORK

- Press ▼ to desired field, and complete the values

* Ensure to assign a static address, units will not work on DHCP

4.2 RS232 / 485

- Press ▶ once to select RS232/485
- Press OK

- Press ▼ to select field
- Press ◀ ▶ to change values

* Recommended distance

** RS232 = 20m - 60m

*** Could be affected by distance and power cables running parallel with unit cable

** RS485 = 1000m (max)

*** Could be affected by power cables

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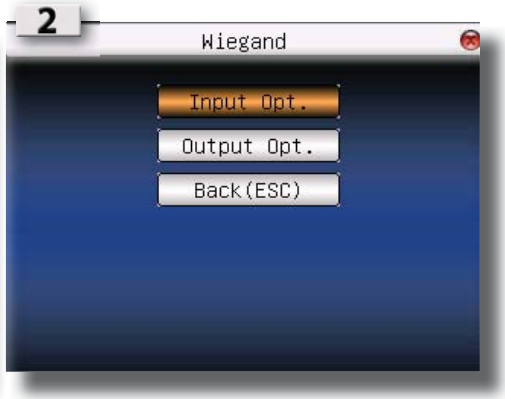
4.3 Security

- Press ▶ 2x times to select SECURITY
- Press OK

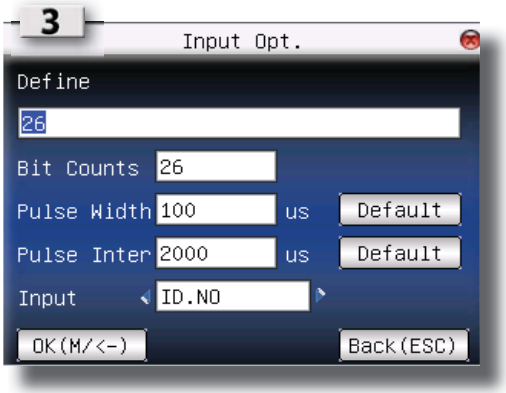
- Press ▼ to change values

4.4 Wiegand

- Press ▶ 3x times to select WIEGAND
- Press OK



- Select INPUT OPT



- Press ▼ to desired field and enter values
- Press OK to save

Summary

* Device related password
* Restrict sub-administrator access

* Use WIEGAND communication port to connect to maglock or turnstiles

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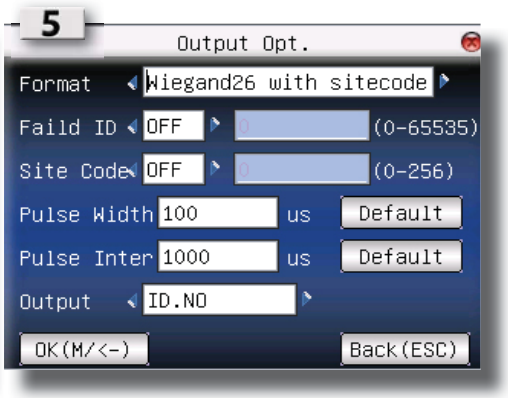
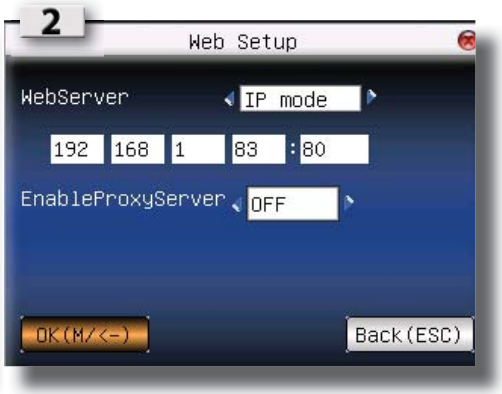
- Select OUTPUT OPT.



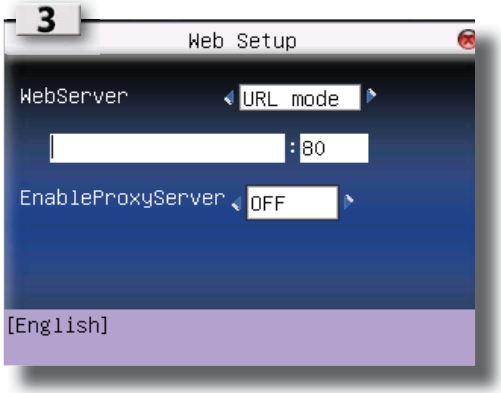
- Press ▼ to select fields
- Press ◀ ▶ to change values or enter values

4.5 Web Setup

- Press ▼ to select WEB SETUP



- Press ▼ to select fields to change values



- Fill in the fields as requested

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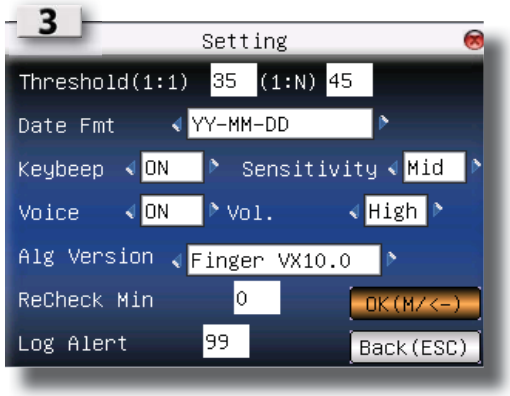
5. System

5.1 System settings

- Press M/↵ once
- Press ▶ 2x times to select SYSTEM

- Press OK to enter SYSTEM SETTINGS



- Press ▼ to scroll down to fields
- Change values

5.2 Data Management

- Press ▶ to select DATA MNG

- Press OK on a delete function
- Press OK to confirm

Summary

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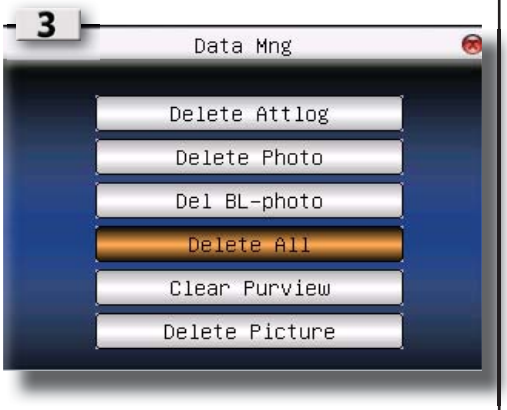
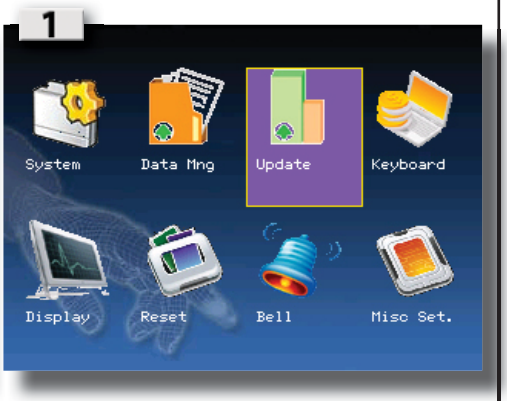


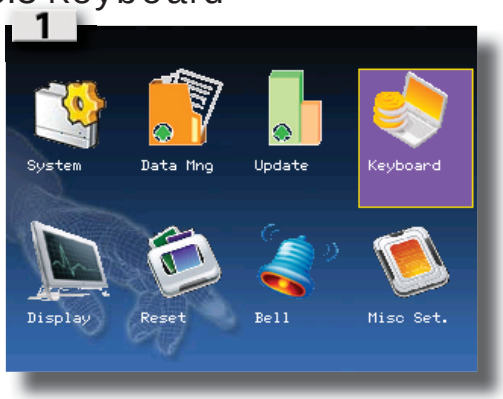
- Press ▼ to select desiired option
- Press OK to confirm

5.2.1 System Update

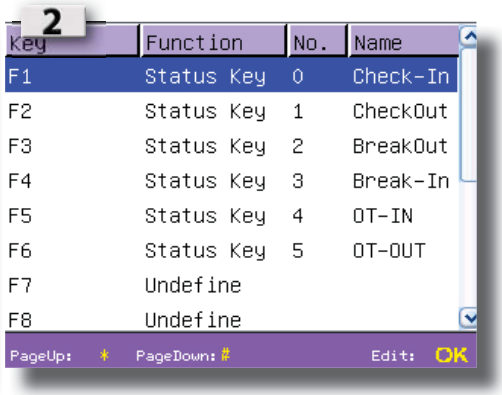


- Insert PENDRIVE(USB) with latest firmware on, before accessing this function

5.3 Keyboard

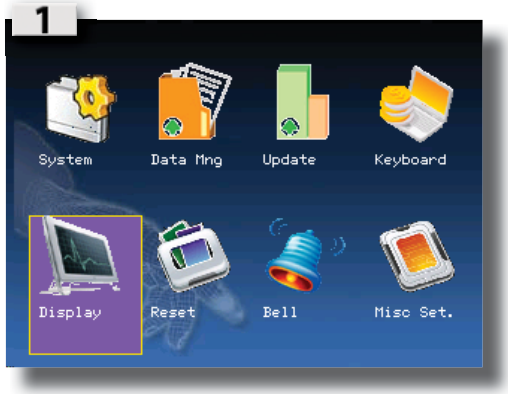


- Press ▶ 3x times to select KEYBOARD
- Press OK

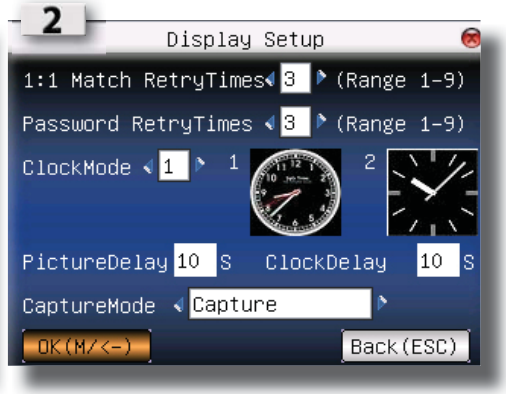


- Press OK to edit selected field

5.4 Display



- Press ▼ to select DISPLAY
- Press OK



- Press ▼ to select field
- Press ◀ ▶ to change values
- Press OK to save

Summary

* System update - ensure to have latest firmware loaded on USB before this function will activate

* Custom “F” keys to dif-firentiate between access modes

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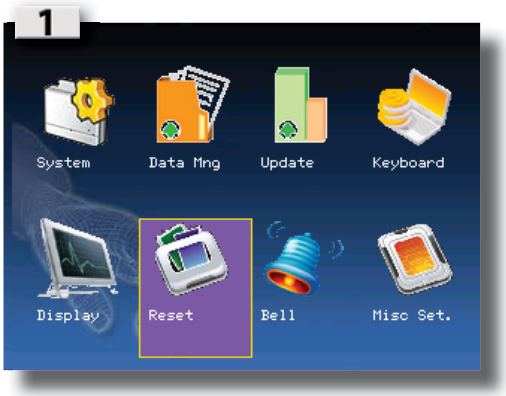
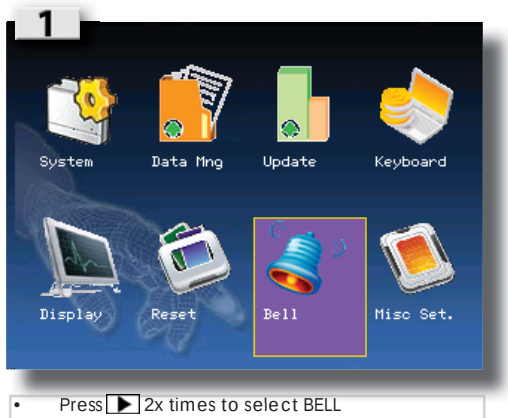
5.5 System Reset

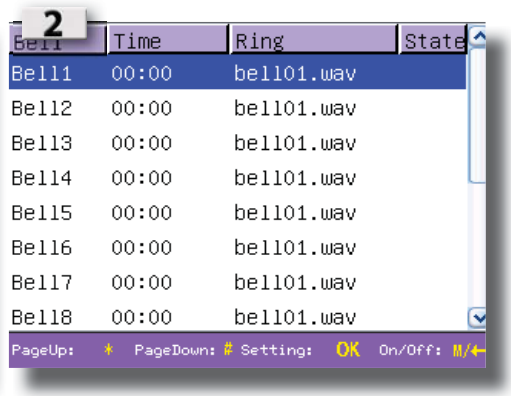


- Press ▶ to select RESET
- Press OK

- Select field that needed to be reset
- Press OK to confirm

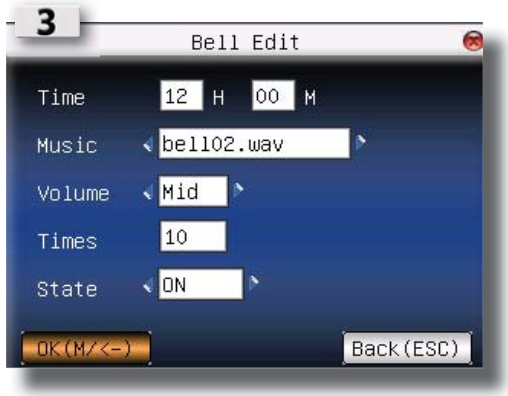
5.6 Bell

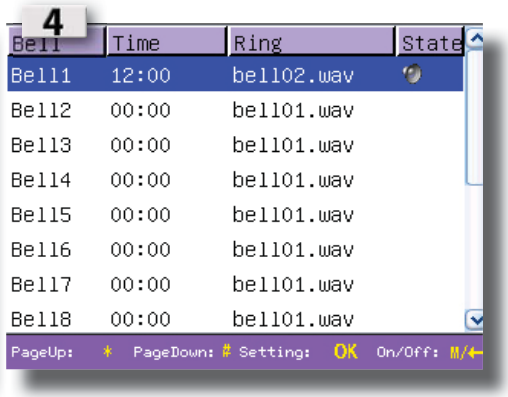




- Press ▶ 2x times to select BELL
- Press OK

- Press OK to edit the field





- Press ◀ ▶ to change values or enter values
- Press OK to save

- Display will indicate change with a BELL in the STATE field

Summary

* Reset function are only configuration of unit, and not to delete users

* Notification bell for time breaks (lunch / tea / etc)

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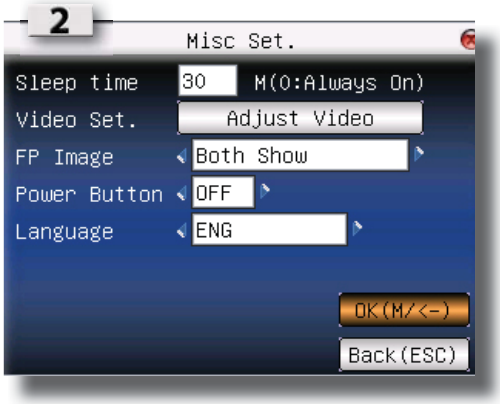
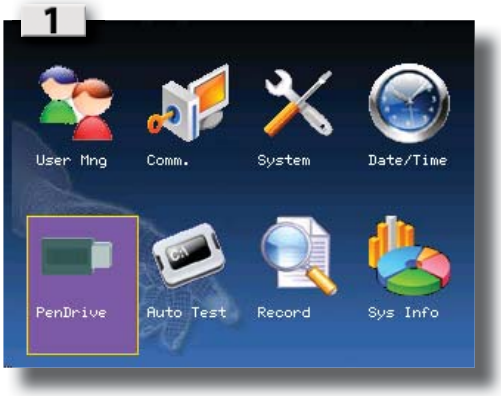
5.7 Miscellaneous settings

- Press ▶ 3x times to select MISC SET
- Press OK



- Press ◀ ▶ to change the value of the desired field or enter text

5.8 Pendrive (USB)

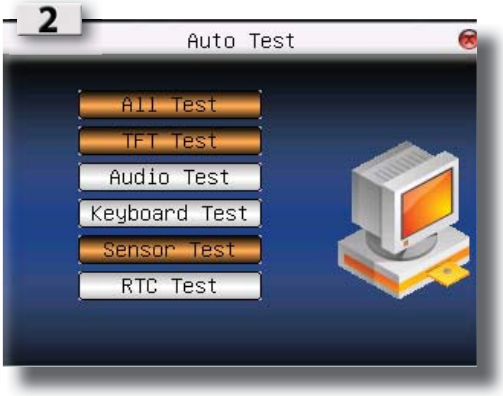


- Select PENDRIVE on the MAIN MENU

- Insert a PENDRIVE (USB) and select desired option

5.9 Auto Test

- Select AUTO TEST on the MAIN MENU



- Select the desired field for testing

Summary

* Ensure device settings are correct when installing the device

* Pendrive / USB can be used to upload and download user ID's

* Ensure to run a AUTOTEST to test all functions on unit

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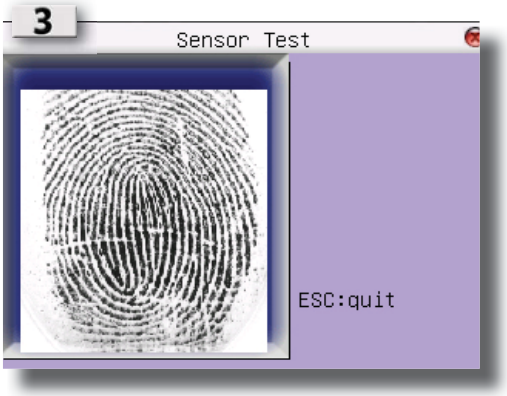


- Ensure to see the image of you finger print (see image left). This indicates that the sensor is in working condition.

- Press ▼ to select sensor test
- Test accordingly (see note on right hand side)
- Press OK to save

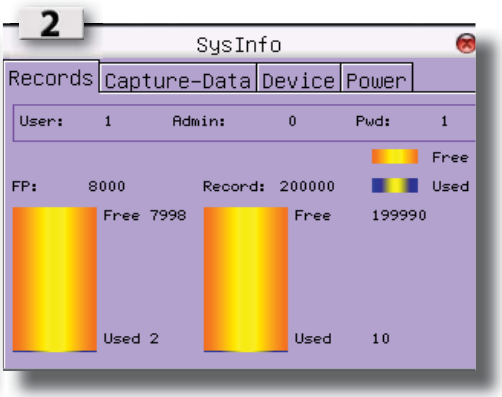
5.10 Record

- Select RECORD on the MAIN MENU

- Select option to run desired query on

5.11 System Information

- Select SYS INFO on the MAIN MENU



- Press ▶ to select desired info page
- RECORD screen

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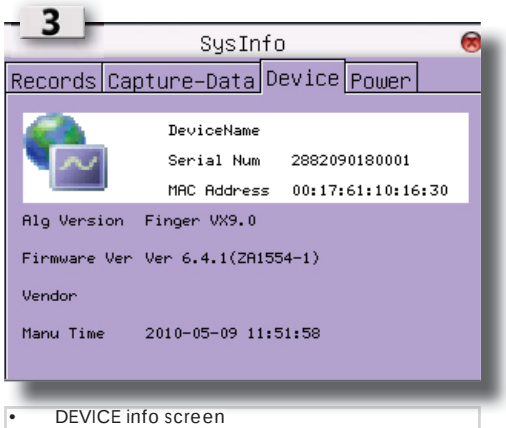
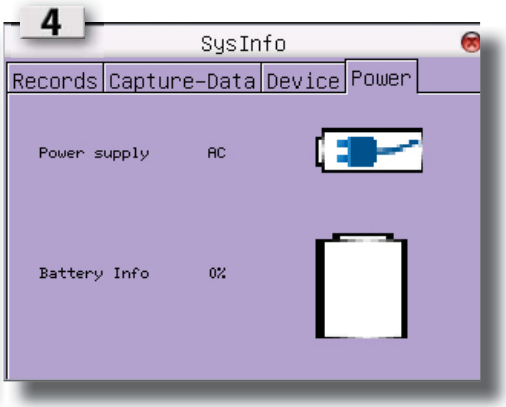


- DEVICE info screen



- POWER info screen

5.11.1 Number of Password Users Available in the Terminal (Password User)

Users can do verification using PIN password and a combination of fingerprint and password. To find out how many users are using password:

- Press Menu > Sys Info > Password User > View the number

5.11.2 Number of Time Scanners Have Been Used for Verification (S Logs)

S logs stands for scanner logs, which means the number of times the scanner has been used for verification, regardless of whether it is successful or not. To view the scanner logs:

- Press Menu > Sys Info > Record > Amount of transactions USED / FREE

5.11.3 Free Space Information (Free Space)

Find out the information about availability of space in your terminal through this function.

- Press Menu > Sys Info > Free Space > Free = number available

5.11.4 Device Information (Dev Info)

Find out the information about your terminal through this function. Press Menu > Sys Info > Dev Info > View the info

Information available includes:

- **AttLog (10k)**: Shows the number of attendance logs that can be stored in the terminal, for example for AttLog (10k) 12 means 10,000 x 12 = 120,000
- **S Logs**: Shows the number of Scanner Logs available for the terminal.
- **Manufactured Time (Manu Time)**: The date and time when the terminal was produced is displayed when you press Manu Time
- **Serial Number of the Terminal (Serial Num)**: The Serial number is pasted on the back of the terminal but in case the sticker is damaged, this is where you can retrieve the serial number.
- **Manufacturer:** Get the name of the manufacturer of the terminal here.
- **Device Name**: All models have different names. If you don't know the name of the terminal that you are having, get it here.
- **Algorithm Version**: This is where you can find terminal's algorithm version.

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- **Firmware Version**: Support sometimes require a firmware version to resolve some support issues. The version and date of the version is released is provided here. **For example**: Ver 6.20 Aug 19 2009
- **View MAC**: This feature is a security feature of the products. Linking Software to the terminal requires the correct MAC address. Without availability of MAC address, the software will not be activated correctly. All products are supplied with the correct MAC address to ease communication. This is also to hinder people from using the software with a different hardware brand. An example of a MAC address is 00:0A:5D F1 BE 57.
- Press Menu > Sys Info > Dev Info > View MAC

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Appendix A:

S900 Pinout